

“She is one of the most dedicated and hard-working people I’ve ever been around. This dedication is fueled by her intense commitment to the human spaceflight dream and to the vision of human exploration of space.”

Greg Hayes, Director of External Relations

Sue Garman

After more than 30 years, Susan H. Garman retired from the space program in April. Garman began her career in 1967 with the Federal Electric Corporation, and from 1983 to 1987, she served as the Director of Administration for Hernandez Engineering, Inc. In 1987, she joined JSC in the Business Administration Directorate. Since then, Garman has served in numerous key Center and Agency positions, including temporary assignments on the NASA Administrator’s staff both as the Executive Assistant to the Administrator and as the Deputy Chief of Staff; in various Center procurement positions; and since January 1994, in various positions in the Office of the Director at JSC – most recently as the Center’s Associate Director.

Below, she shares her thoughts about her Johnson Space Center career.

What have you enjoyed about your career at JSC?

I don’t know anyone who could have had more fun than I’ve had working for NASA! I started working at JSC as a contractor in 1967 for the old Mission Planning and Analysis Division and met my husband, Jack, while working a simulator for Apollo 8 in Mission Control. Through the years, I’ve worked for some great, interesting people – Dee Lee, Dan Goldin, Darlene Druyun, George Abbey, Courtney Stadd, Beak Howell – and have been fortunate to have always been surrounded by dedicated people who are committed to achieving NASA’s incredible mission.



What will you miss about working at JSC?

The people are, undoubtedly, what I’ll miss most when leaving JSC. My only regret is that I cannot begin to express my thanks and appreciation for the support and friendship I’ve received through the years. Wherever you are, I’ll be cheering from the sidelines and hoping that our paths cross again.

What are your plans for the future?

My first order of business is to welcome a granddaughter into the world in July! Beyond that, only time will tell.

Randy Stone

Brock “Randy” Stone recently retired from NASA following a remarkable 36-year career that included work on the Apollo lunar missions, Skylab, the Space Shuttle and the International Space Station.

A native Texan, Stone began his career with NASA in 1967 when Johnson Space Center was known as the Manned Spacecraft Center. He started out working as a systems engineer supporting landing and recovery of the Apollo spacecraft.

He was a flight controller and flight director in the Mission Control Center for almost 30 years and was named Chief of the Flight Director Office in 1989. From 1992 to 2001, he served as Director of Mission Operations, where he was responsible for oversight of Space Station and Space Shuttle missions before assuming the role of Associate Director, Management (acting). He was named Deputy Director in November 2001. Below, Stone shares his thoughts about his JSC career.

What NASA experiences stand out the most?

My participation in the recovering of the Apollo astronauts on Apollo 7, 8, 9, 11, 12 and 13.

The biggest thrills were handling the Apollo 11 Moon rock box when it was flown off the *USS Hornet*, being in the MQF with Pete Conrad, Al Bean, and Dick Gordon and lastly seeing the parachute open on Apollo 13.



Getting ready to fly STS-1, having to say we were “no go for launch” on the first real attempt and then feeling the unbelievable relief and elation when John Young and Bob Crippen called “wheel stop” after landing.

Being selected as a Flight Director in 1981, Director of MOD in 1992 and being asked to be Deputy Center Director. Those were jobs that had been held by my heroes. To this day I have to pinch myself to know that it was really me who had the honor of following in the footsteps of such great people.

What are you going to miss?

I am going to miss the daily interaction with so many extremely talented people all working together to solve difficult problems.

What are your plans for the future?

Right now my plan is to spend time with my family, build a great home workshop, fly model airplanes and fish. If I get bored I may poke around and see if I can still contribute to one the world’s greatest endeavors – human spaceflight.

Lt. Gen. Jefferson D. Howell Jr., Center Director

Get a Taste of the Future!

by Catherine E. Borsché



Imagine being stuck in a house for months, not able to venture out to go to the grocery store whenever a particular food craving hits. All that you have to survive on is already stowed in the pantry. The items in this pantry have been predetermined long ahead of time, and if your taste buds happen to change, you are simply out of luck.

Astronauts flying aboard the International Space Station face that dilemma each time they leave Earth, although the Space Food Systems Laboratory at Johnson Space Center does all it can to ensure the astronauts are happy when it comes to their meals.

Menu planning for a Space Station crew begins when the crewmembers visit the Space Food Systems Laboratory. They essentially try every food item available and give each item a “score.” The crew goes to Russia and repeats the process, this

time with the Russian food system. Once all the food samples are scored, sample menus are created by the United States and Russia. Those menus are then merged together, so the end result will usually have two meals per day coming from the Russian food system, and the two remaining meals from the United States food system. The astronauts will visit the Space Food Systems Laboratory again to try out these sample menus and make sure that they are completely satisfied with their choices.

However, in space, the menus are seldom used.

“We use the menu as a planning tool,” said Vickie Kloeris, JSC Manager of Space Food Systems. “We do provide a copy of the menu to them. We put it in a container with the food, but they don’t necessarily eat it in the order that we’ve planned it.”

Food choice is extremely important to astronauts, and the longer the duration of the flight, the more significant those choices become. The meals are stowed pantry-style onboard Space Station, so crewmembers can eat food items in any order they wish. For instance, if crewmembers want to have chicken three nights in a row, they can do that.

“Being on Space Station, so much of what is going on is beyond their control,” Kloeris said. “And so food is just a comfort thing that they would like to feel they have some input on or some control over. It’s just a big psychological thing – I don’t know if we’ve flown anyone to Station that has not been concerned about their food.”

Emilce (Emmy) Vest, Food Services Director and Executive Chef for JSC, agrees that comfort food is of the utmost importance, especially when astronauts are in space.

“In situations where there is little outside stimulation, and we’re somewhat lonely, food becomes more of a focus because it gives us sensual and chemical stimulation,” Vest said. “We also crave the social payoff in ‘breaking bread’ with our companions.”

The Space Food Systems Laboratory tries to vary the menus a bit by allowing the crew to take bonus containers into space, in which they can request special, off-the-menu food items. These items usually include commercially available candy bars, cookies or crackers – anything with a long shelf life. Yet even with the special goodies sent to the Space Station ahead of time, astronauts inevitably return to Earth wishing that they could have had more food variety in space.

More variety – especially fresh food items – often shows up when a Russian Progress vehicle docks to the Space Station. The Progress usually brings fresh items such as apples, oranges, grapefruits and other fruit items. The Russians will pack those types of fresh food items as well, but they also include interesting foods that Americans do not typically eat.

“The Russians will fly things like raw onion and raw garlic, because that’s more a part of their culture than part of our culture,” Kloeris said. “But it’s interesting because some of our American crewmembers have said that even though it didn’t sound all that great ahead of time, it actually was nice to have it because it was something totally different.”

continued on page 10



Vickie Kloeris, JSC Manager of Space Food Systems, displays some space food items.

Choosing food items for Space Station crewmembers can also pose a challenge due to the fact that most crewmembers say that their tastes change while in orbit. While Kloeris notes that there is no real scientific data to support that theory, there is plenty of anecdotal data and personal accounts to support its likelihood. For instance, it is well known that astronauts seem to like spicier foods and tart beverages such as lemonade while in orbit, when on the ground those items are not as appreciated.

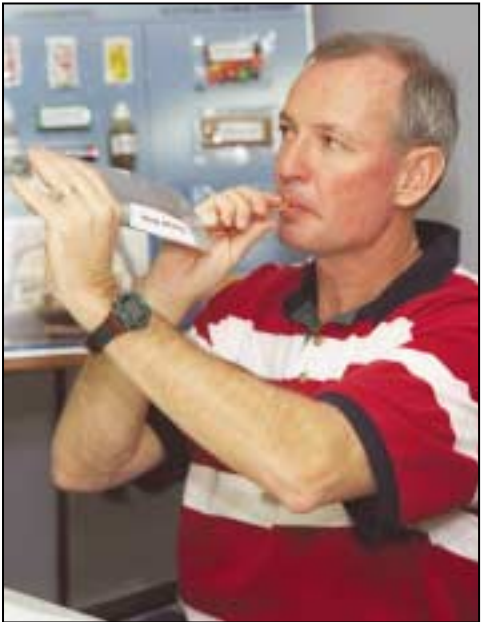
Astronaut Peggy Whitson's personal account of food while in space echoes that thought. "When STS-112 visited, I told the commander that I wasn't opening the hatch unless they had salsa," said Whitson, the Expedition 5 Space Station Science Officer. "My favorite space food was peanut butter. I'm not a big fan of it on the ground, but couldn't get enough of it in space."

Food becomes a priority when it is one of the few connections an astronaut has to home. Although the Space Food Systems Laboratory faces many challenges such as keeping the food varied, tasty and fresh for the astronauts, they are learning more and more after each Expedition crew about how to keep long-duration flight astronauts happy with their menus. And although food seems so basic to the ordinary person, it is much more important when you do not have ready access to a grocery store.

"Taste is one of the first senses with which we explore the world," Vest said. "There are a lot of chemical reasons for food to be a comfort mechanism. However, our primitive brain is hardwired to equate food with 'home' and safety. When we're hungry, we're all 2 years old."



Astronaut Jerry L. Ross, STS-110 Mission Specialist floats on the middeck of the Space Shuttle Atlantis along with a tray of food.

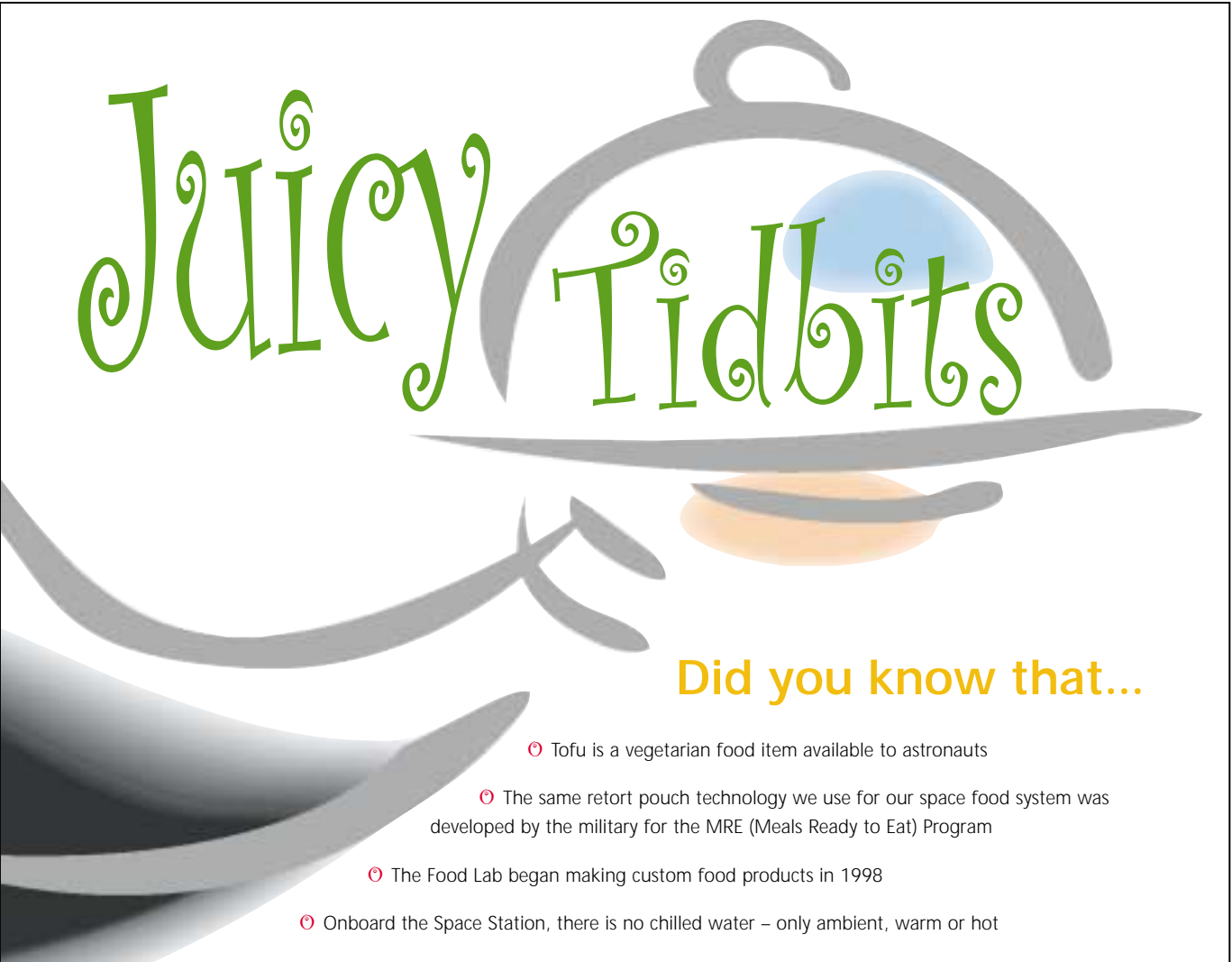


Astronaut Brian Duffy samples a beverage during a crew food evaluation session in the food laboratory at JSC.



Expedition 5 Space Station Science Officer Peggy Whitson and Flight Engineer Sergei Treschev share a meal in the Zvezda Service Module on the Space Station.

Juicy Tidbits



Did you know that...

- ❶ Tofu is a vegetarian food item available to astronauts
- ❷ The same retort pouch technology we use for our space food system was developed by the military for the MRE (Meals Ready to Eat) Program
- ❸ The Food Lab began making custom food products in 1998
- ❹ Onboard the Space Station, there is no chilled water – only ambient, warm or hot
- ❺ You can have a meal replacement drink in space that is either vanilla, strawberry or chocolate
- ❻ The only authentic juice the Space Food Systems Laboratory offers is spray-dried orange juice
- ❼ The Space Food Systems Laboratory only uses non-fat dried milk because fat can potentially go bad over time
- ❽ The astronauts can eat warm desserts such as cobbler and bread pudding in space
- ❾ Freeze-dried items have had enough water removed so that no bacteria can grow
- ❿ Russia and the United States each provide half of the food items onboard the Space Station
- ⓫ An astronaut's daily food intake consists of three meals and a snack
- ⓬ The Station crew operates on a 10-day menu cycle
- ⓭ Crewmembers can carry on a warm sandwich during launch and eat it when they first reach orbit
- ⓮ Many of the food items used for space are commercially available and on grocery store shelves
- ⓯ Flour tortillas are considered the favorite bread item of astronauts because they do not give off crumbs

